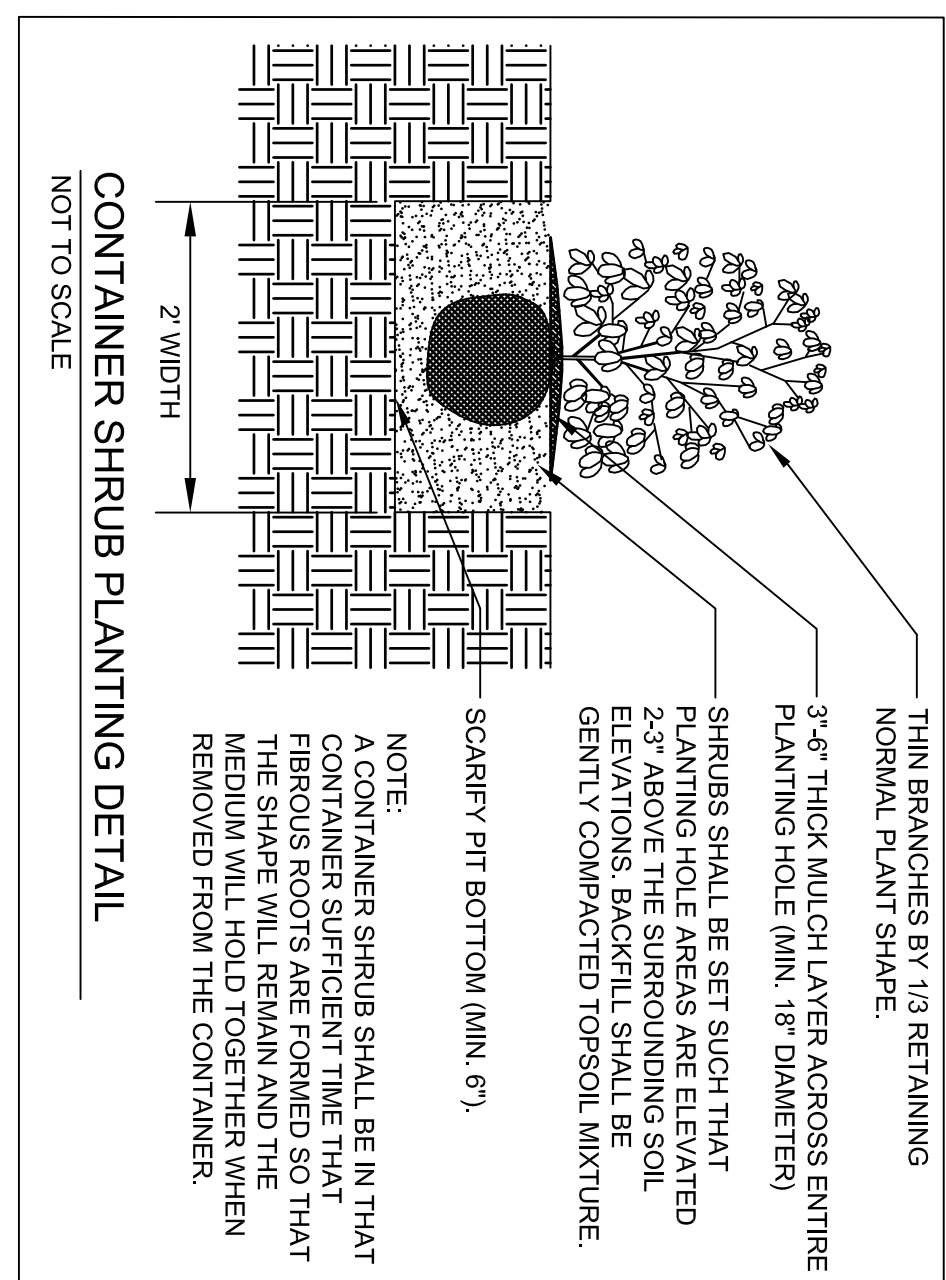


B&B DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

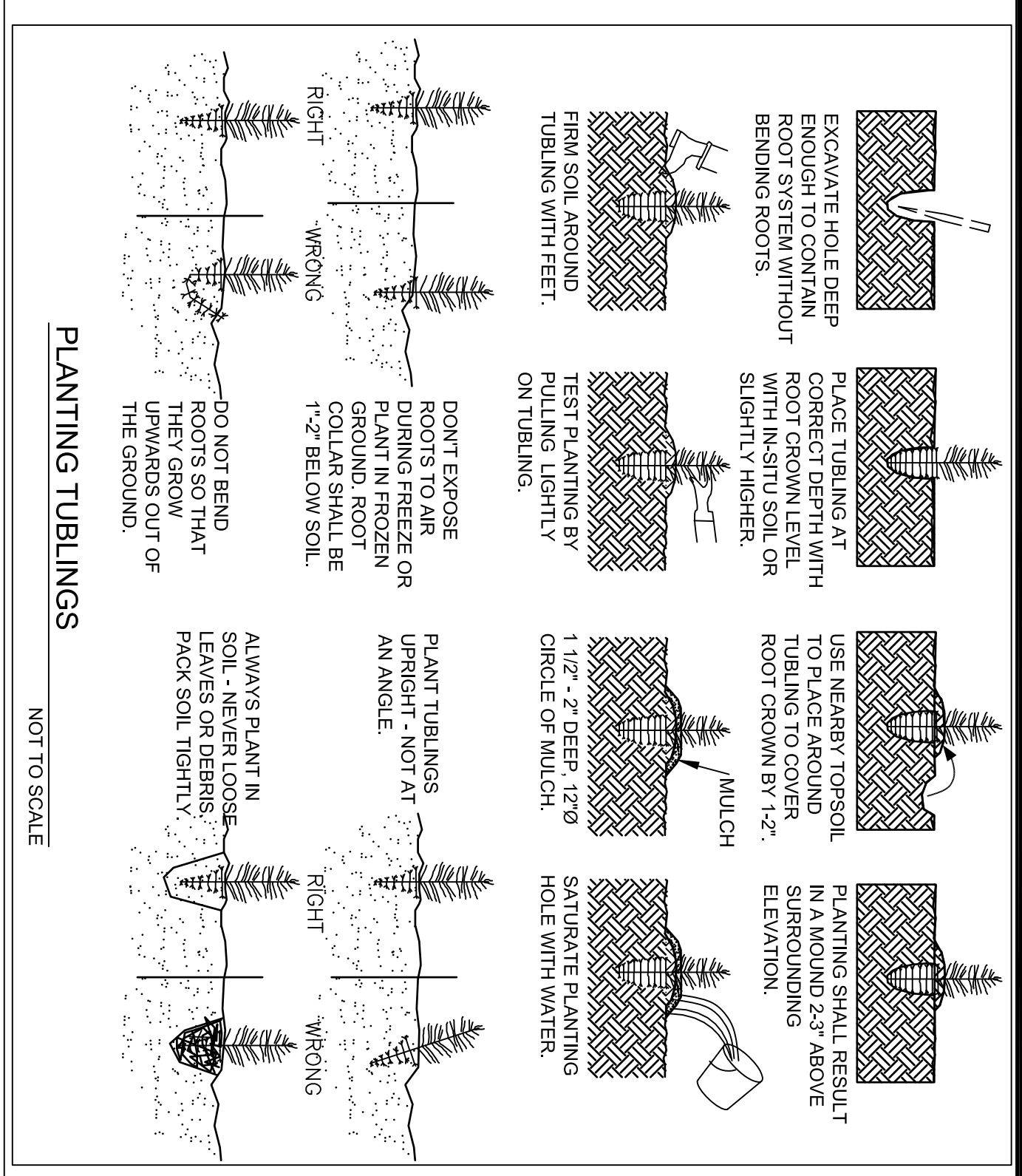
NOTES:
1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE.
2. WATER THOROUGHLY SUBSEQUENT TO INSTALLATION.
3. REMOVE HOSE AND STAKE AT END OF GUARANTEE PERIOD.



CONTAINER SHRUB PLANTING DETAIL
NOT TO SCALE

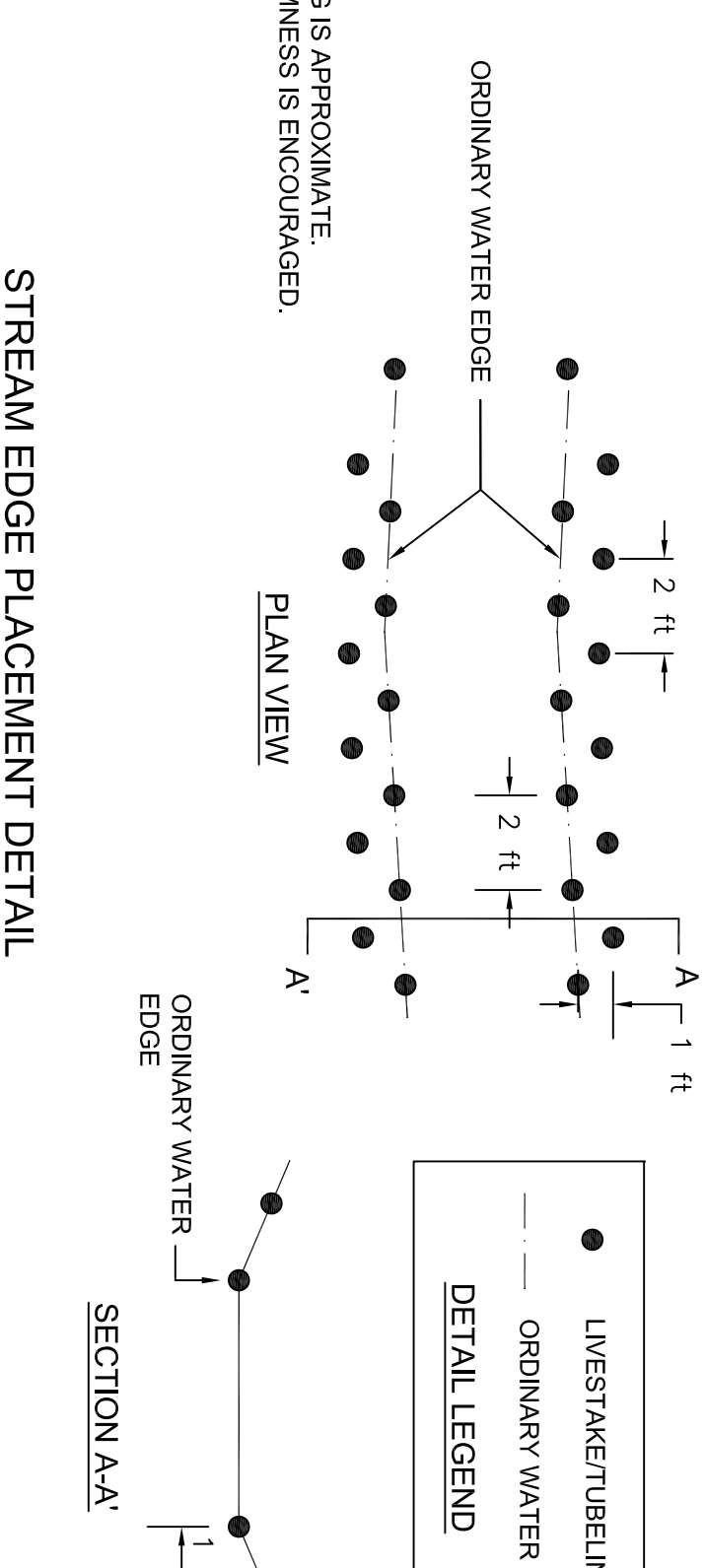
NOTE:
CONTAINER SHRUB SHALL BE IN THAT CONTAINER SUFFICIENT TIME THAT FIBROUS ROOTS ARE FORMED SO THAT THE SHAPE WILL REMAIN AND THE MEDIUM WILL HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

THIS PLAN IS FOR PLANTING PURPOSES ONLY.



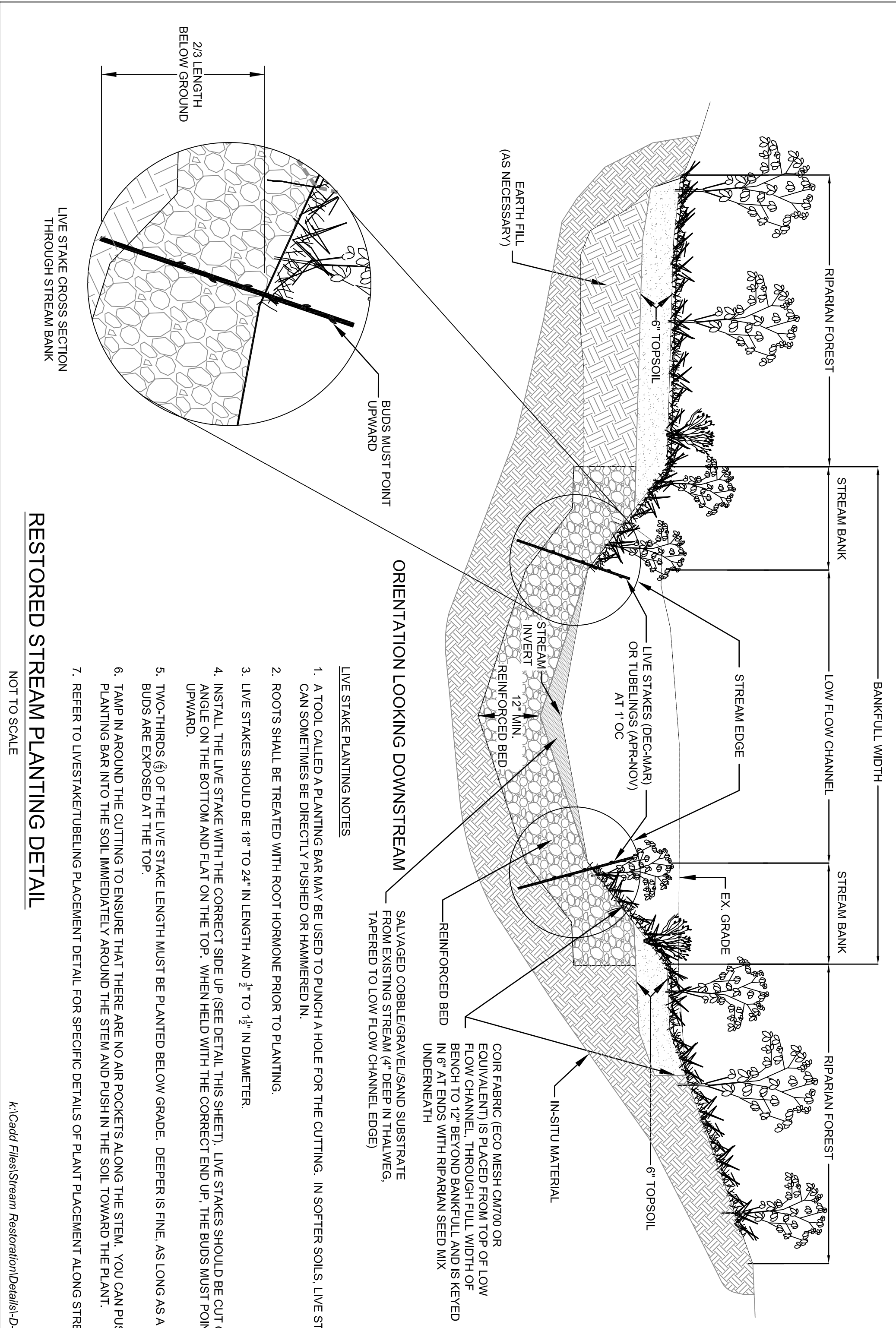
PLANTING TUBLINGS
NOT TO SCALE

NOTE:
SPACING IS APPROXIMATE. RANDOMNESS IS ENCOURAGED.



STREAM EDGE PLACEMENT DETAIL
NOT TO SCALE

PLEASE REFER TO PLANTING PLAN SHEETS FOR LEGEND



LIVE STAKE PLANTING NOTES

1. A TOOL CALLED A PLANTING BAR MAY BE USED TO PUNCH A HOLE FOR THE CUTTING. IN SOFTER SOILS, LIVE STAKES CAN SOMETIMES BE DIRECTLY PUSHED OR TAMERED IN.
2. ROOTS SHALL BE TREATED WITH ROOT HORMONE PRIOR TO PLANTING.
3. LIVE STAKES SHOULD BE 1/8" TO 2/4" IN LENGTH AND 1/2" TO 3/4" IN DIAMETER.
4. INSTALL THE LIVE STAKE WITH THE CORRECT SIDE UP (SEE DETAIL, THIS SHEET). LIVE STAKES SHOULD BE CUT ON AN ANGLE ON THE BOTTOM AND FLAT ON THE TOP. WHEN HELD WITH THE CORRECT END UP, THE BUDS MUST POINT UPWARD.
5. TWO-THIRDS (2/3) OF THE LIVE STAKE LENGTH MUST BE PLANTED BELOW GRADE. DEEPER IS FINE, AS LONG AS A FEW BUDS ARE EXPOSED AT THE TOP.
6. TAMP IN AROUND THE CUTTING TO ENSURE THAT THERE ARE NO AIR POCKETS ALONG THE STEM. YOU CAN PUSH THE PLANTING BAR INTO THE SOIL IMMEDIATELY AROUND THE STEM AND PUSH IN THE SOIL TOWARD THE PLANT.
7. REFER TO LIVESTAKE/TUBELING PLACEMENT DETAIL FOR SPECIFIC DETAILS OF PLANT PLACEMENT ALONG STREAM BANK.

RESTORED STREAM PLANTING DETAIL
NOT TO SCALE

PLANTING SPECIFICATIONS

1. PLANT DETAILS ARE INCORPORATED INTO THIS SPECIFICATION BY REFERENCE.
2. THE SUPPLIER OF ALL SEEDS AND/OR VEGETATION SHALL CERTIFY THAT THE ORIGIN OF THE SEEDS FROM WHICH THE PLANTS OR SEEDS WERE PRODUCED IS FROM HARDINESS ZONES 6 AND 7, FROM THE EASTERN OR CENTRAL PORTIONS OF THE U.S., PRIOR TO PLANTING.
3. ANY NURSERY SUPPLYING THE STOCK SHALL PROVIDE A CURRENT NURSERY INSPECTION CERTIFICATE FROM THE STATE DEPARTMENT OF AGRICULTURE OR PROVIDE AT LEAST THIRTY DAYS ADVANCE NOTICE FOR WETLAND STUDIES AND SOLUTIONS, INC. (WSSI) TO INSPECT THE PLANT SOURCE AREAS AT WSSI'S DISCRETION. ANY SUCH INSPECTION IS NOT DEEMED APPROVAL OF THE PLANT MATERIALS.
4. ALL PLANTS SHALL BE SET STRAIGHT (OR PLUMB).
5. PLANTING SHALL ONLY BE PERMITTED BETWEEN NOVEMBER 4 AND APRIL 4. NO PLANTING SHALL OCCUR WHEN THE SOIL IS FROZEN. SEEDING SHALL BE COMPLETED DURING MARCH THROUGH MAY OR SEPTEMBER THROUGH NOVEMBER. THESE TIME LIMITS MAY NOT BE MODIFIED UNLESS APPROVED BY WETLAND STUDIES AND SOLUTIONS, INC. IN ADVANCE WITH THE SIGNATURE OF SURVIVAL BONE SOLELY BY THE CONTRACTOR.
6. PLANTING HOLES FOR BARE ROOT TREES SHALL BE 1-2" DEEPER THAN THE ROOT COLLAR (I.E. 1-2" DEEPER THAN THE NURSERY). BARE ROOT SEEDLINGS SHALL BE INSTALLED WITH THE USE OF A SHARP-SHOULDER SHOVEL. AS DEPICTED WITH THESE PLANS, THE PLANTING HOLE SHALL BE LARGE ENOUGH TO AVOID THE NEED FOR ROOT TRIMMING WHILE EVER POSSIBLE (SEE PLANTING DETAILS). SHALL BE ALLOWED. IT IS EXTREMELY CRITICAL THIS BE ADHERED TO FOR EVERGREENS. BARE ROOT STOCK SHALL BE PLANTED WITH THEIR ROOT-COLLAR 1 TO 2 INCHES DEEPER THAN THE ADJACENT SOIL ELEVATION, USING ADJACENT SOIL TO CREATE A HAMMOCK OR MOUND THAT THE SEEDLING IS SET WITHIN.
7. PLANTING HOLES FOR CONTAINER GROWN PLANTS SHALL BE ONE FOOT (1') DEEP PLUS THE CONTAINER DEPTH IN WHICH THE PLANT HAS BEEN GROWN AND TWO FEET (2') DEEPER THAN CONTAINER.
8. BACKFILL THE PLANTING HOLES WITH THE IN-SITU SOIL MATERIALS REMOVED FOR PLANTING AFTER REMOVING ALL STONES, ROOTS, AND OTHER DEBRIS GREATER THAN 1-1/2" IN DIAMETER.
9. FOLLOWING THE BACKFILLING, WATER TO THE POINT OF SOIL SATURATION (IF NOT PLANTED IN THE WET) AND TAMP TO COMPACT THE BACKFILL MIXTURE. ADD EXISTING SOIL TO BRING THE FINAL GRADE IN THE PLANTING HOLE TO THE SURROUNDING SOIL SURFACE. RAKE THE UNUSED EXISTING SOIL OUTSIDE THE PLANTING HOLES, TAKING CARE NOT TO MOUND THE SOIL OR TO SIGNIFICANTLY ALTER THE EXISTING GRADES AND THEN PLACE MULCH (MIN. 2" THICK) FOR ENTIRE PLANTING HOLE EXCEPT THAT NO MULCH IS REQUIRED FOR EMERGENT PLANTINGS). THE PLANTING HOLE AREAS MUST NOT BE DERESSED BELOW THE SURROUNDING SOIL SURFACE ELEVATION. SAND AREAS SHALL BE SLIGHTLY RAISED (2-5") RELATIVE TO THE SOIL SURFACE.
10. AS INDICATED IN THE PLANT LIST, THE SPECIES THAT ARE SPECIFIED AS CONTAINER GROWN SPECIMENS SHALL BE PLANTED 15" AND 18" IN HEIGHT. THEY SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED AND ESTABLISHED IN THE PLANTING CONTAINER IN WHICH THEY ARE GROWING. A CONTAINER SHRUB SHALL BE IN THAT CONTAINER A SUFFICIENT TIME SUCH THAT FIBROUS ROOTS ARE FORMED SO THE SHAPE WILL REMAIN AND THE MEDIUM WILL HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER (REFER TO AMERICAN STANDARD FOR NURSERY STOCK).
11. DO NOT REMOVE PLANTS FROM CONTAINERS UNTIL IMMEDIATELY BEFORE PLANTING. EXAMINE THE ROOTS TO SEE IF THEY ARE NOT BOUND. CAREFULLY SEPARATE ANY POT BOUND OR CRAMPED ROOTS AND SPREAD THEM OUT WHEN PLACING THE PLANT SO THAT THE ROOTS CAN GROW WITHOUT FURTHER CONSTRUCTION OF THE ROOT BALL.
12. FERTILIZE EACH BARE ROOT, PLUG, TUBER, AND PINNAC CONTAINER PLANT WITH A 3 GRAM TABLET OF CONTROLLED RELEASE FERTILIZER, FERTILIZE EACH QUART CONTAINER WITH A 10 GRAM TABLET. USE A 20 GRAM TABLET OF FERTILIZER WITH EACH 1 GALLON AND 2 GALLON CONTAINER. GENERALLY FOR EACH 12 TO 18 INCHES OF PLANT HEIGHT OR FOR EACH 1/2" OF TREE DIAMETER AT THE BASE, USE 20 GRAMS FOR SLOW GROWING PLANTS OR 40 GRAMS FOR FAST GROWING PLANTS OR POOR SOIL SITUATIONS. SAID FERTILIZER TABLETS SHALL BE ASGRF09M 20-10-05 OR APPROVED EQUIVALENT, APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
13. AS RECOMMENDED BY THE CONTRACTOR AND APPROVED BY ENGINEER, THE CONTRACTOR SHALL WATER THE PLANTS AS NEEDED DURING THE CARE AND REPLACEMENT PERIOD OR UNTIL FINAL ACCEPTANCE, WHICHEVER IS THE SHORTEST.
14. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING NON-SURVIVING TREES AND SHRUBS DURING THE CARE AND REPLACEMENT PERIOD (12 MONTHS, UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS) OR UNTIL FINAL ACCEPTANCE, WHICHEVER IS THE SHORTEST. AS REQUIRED BY THE TERMS OF THE SURVIVAL WARRANTY SPECIFIED HEREIN AND/OR IN CONTRACT DOCUMENTS, THE DOCUMENTS FOR THE REPLACED PLANTS SHALL BE THOSE PROVIDED IN THE PLANT LIST.
15. REFER TO APPLICABLE SCHEDULES WITHIN THIS PLAN SET FOR ADDITIONAL GUIDANCE ON PLANTING REQUIREMENTS.
16. INVASIVE AND NOXIOUS WEEDS SHALL BE REMOVED BY HAND WITH LOCALIZED APPLICATIONS OF ROUNDUP WHERE NECESSARY.
17. ALL BARE ROOT SEEDLINGS SHALL BE TREATED WITH ROOT DIP ABSORBENT POLYMERS AND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. SAID ROOT DIP SHALL BE WYCORTEE™ ROOT DIP OR APPROVED EQUAL.

SEEDING SPECIFICATIONS

1. SEED SHALL HAVE BEEN COLLECTED THE SAME YEAR OF SEEDING. A SEED GERMINATION AND PURITY RATE OF 75% IS REQUIRED. EVIDENCE OF SUCH SHALL BE PROVIDED TO OWNERS REPRESENTATIVE PRIOR TO PLANTING.
2. THE SPECIFIED SEED SHALL BE BROADCAST IN AREAS SPECIFIED ON THE PLANTING PLAN. FOLLOWING SEEDING, MECHANICALLY SOW SEED TO A DEPTH OF 1/8TH OF AN INCH BY THE USE OF A HAND RAKE.
3. THE LANDSCAPE CONTRACTOR SHALL INSPECT THE AREAS AND CONDITIONS UNDER WHICH THE SEEDING WORK IS TO BE PERFORMED PRIOR TO COMMENCING WORK. IF CONDITIONS ARE DETERMINED TO BE UNFAVORABLE AND TIMELY COMPLETION OF THE WORK, HESHE SHALL NOTIFY THE OWNERS REPRESENTATIVE VERBALLY AND IN WRITING AND POSTPONE COMMENCING WORK UNTIL THE UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
4. PRIOR TO SEEDING, THE TOP SOIL SHALL BE RAKED SMOOTH AND CLEARED OF ALL STONES LARGER THAN 5" AND TRASH, DEBRIS, BRANCHES AND OTHER MATTER DETRIMENTAL TO THE SUCCESS OF SEEDING.
5. FERTILIZER IS TO BE BROADCAST AND RAKED INTO THE TOP ONE INCH OF TOP SOIL IMMEDIATELY BEFORE SEEDING. FERTILIZER SHALL HAVE A FORMULATION OF 10-10-10 AND BE APPLIED AT A RATE OF 50 POUNDS PER 1000 SQUARE FEET.
6. MULCH SHALL BE STRAW CAN BE SUBSTITUTED IF APPLIED AT A RATE SPECIFIED BY THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992.
7. CARE SHOULD BE EXERCISED TO INSURE UNIFORM SEED COVERAGE IS OBTAINED. SEED SHALL BE APPLIED AT THE RATE SPECIFIED ON THE PLANTING SCHEDULE.
8. FOLLOWING SEEDING, MECHANICALLY SOW SEED TO A DEPTH OF 1/8 OF AN INCH BY THE USE OF A CULTIVATOR, YORK RAKE, OR HAND RAKE.

PLANTING AND SEEDING SURVIVAL WARRANTY

1. LANDSCAPE CONTRACTOR SHALL GUARANTEE A MINIMUM SURVIVAL RATE OF EACH VEGETATION SPECIES AFTER TWELVE MONTHS OF 85% FOR B&B, CONTAINER GROWN, AND TUBLINGS, AND 80% FOR BARE ROOT AND TUBER STOCK.
2. IF SURVIVAL RATES ARE LESS THAN THE ABOVE WARRANTY RATES, THEN LANDSCAPE CONTRACTOR SHALL REPLACE THE QUANTITY OF DEAD PLANTS WITHIN THE NEXT PLANTING WINDOW (NOVEMBER 4 THROUGH APRIL 4, EXCLUDING FROZEN GROUND PERIODS) FOLLOWING THE END OF THE APPLICABLE WARRANTY PERIOD.

PRODUCT HANDLING, STORAGE, AND DELIVERY

1. HANDLE PLANTS AT ALL TIMES SO THAT ROOTS OR BALLS ARE ADEQUATELY PROTECTED FROM BREAKAGE OF BALLS, FROM SUN AND DRYING WINDS. PLANTS WITH DRIED OUT TOPS OR ROOTS SHALL BE REJECTED.
2. ALL PLANT MATERIALS SHALL BE STORED AND DELIVERED IN SUCH A FASHION AND FOR THE INTERVALS CONSISTENT WITH SOUND SILVICULTURAL PRACTICES.
3. PLANT MATERIAL WILL BE TRANSPORTED FROM THE NURSERY TO THE PLANTING AREAS BY SUCH MEANS AS TO AVOID AND DAMAGE OVER-CROWDING, OR OTHER MECHANISMS BY WHICH PHYSICAL DAMAGE MAY RESULT TO THE PLANTS.
4. PLANT MATERIAL MAY BE RANDOMLY INSPECTED BY THE DESIGN ENGINEER AT ANY POINT IN THE PLANTING PROCESS. PLANTS THAT DO NOT MEET THE SPECIFICATIONS WILL BE REJECTED AND THE CONTRACTOR WILL BE REQUIRED TO SUPPLY REPLACEMENT MATERIAL WITHIN A REASONABLE TIME FRAME (I.E. 1-WEEK). UNACCEPTABLE MATERIAL IS TO BE DEFEND AS THE FOLLOWING:
 - (a) PLANTS WITH BENT TRUNKS OR MULTIPLE LEADERS, UNLESS OTHERWISE APPROVED BY THE DESIGN ENGINEER.
 - (b) PLANTS WITH INSUFFICIENT SIZE (LESS THAN A SPECIFIED HEIGHT).
 - (c) PLANTS WITH INSUFFICIENT SIZE (LESS THAN A SPECIFIED HEIGHT).
 - (d) PLANTS WITH PEST-INFESTED TRUNKS, STEMS, OR LEAVES.
 - (e) PLANTS WITH INSUFFICIENT SIZE (LESS THAN A SPECIFIED HEIGHT).
 - (f) PLANTS OF THE WRONG SPECIES/SUB-SPECIES.
 - (g) PLANTS HAVING ROOT GIRDLING IN THE CONTAINER.

PLANTING NOTES AND DETAILS

1. It is expected and ordered that all species in each of the Species Groups are planted. The tolerances listed in this section apply to the species availability. At a minimum, Contractor to provide at least:
 - a) 3 of the 5 species in Group 1,
 - b) 4 of the 6 species in Group 2,
 - c) all of Group 3,
 - d) 6 of the 8 species in Group 4,
 - e) 3 of the 4 species in Group 5,
 - f) 3 of the 4 species in Group 6 (with Salix nigra a required species),
 - g) all of Group 7,
 - h) 5 of 6 in Group 15.
2. Substitutions for selected species based upon availability shall be requested in writing to engineer, documenting the lack of availability. If the planters inherent in the above schedule is still not sufficient, Engineer is under no obligation to approve substitutions.
3. The planted trees and shrubs shall be randomly spaced and species mixed throughout the planting areas.
4. Container plant and quantities shown for one gallon size. For purposes of substitution, two tubelings are the equivalent of one 1-gallon container plant in this schedule. Contractor may provide a mix of container and tubeling sizes for each species requirement, provided the ratio of tubelings to containers is not less than 2:1. Exception -- Group 6 (Stream Edge) shall be planted in accordance with Note #5.
5. Group 6 (Stream Edge) zone shall be planted with tubelings, or as livestock (Salix nigra only, and only between February 1 and March 31). No one gallon are required to be used for any of this Group's species.
6. Stream Bank and Stream Edge zones shall be planted such that the combined mix of species is spaced approx. 3' O.C. and 1' O.C., respectively. These zones shall be planted such that each individual species in these zones is planted at these rates, resulting in tighter spacing.
7. All seeding rates are expressed in pounds of pure live seed (PLS).

TURFGRASS AREA SEEDING SCHEDULE

SEEDING ZONE	SPECIES ³	SEEDING RATE ² (LBS/AC)	AREA (AC)	G		K	
				0.81	153.90	13,161	0.30
GRASSLAND AREAS (G and K ¹)	KENTUCKY 31 OR TURF-TYPE TALL FESCUE	190.00	153.90	57.00			
	IMPROVED PERENNIAL PREGRASS	5.00	4.05	1.50			
	KENTUCKY BLUEGRASS	5.00	4.05	1.50			
SEEDING TOTALS		200.00	162.00	60.00			

SEEDING NOTES:

1. Substitutions for selected species based upon availability shall be requested in writing to engineer documenting the lack of availability. If the flexibility inherent in the above schedule is still not sufficient, Engineer is under obligation to approve substitutions.
2. All seeding rates are expressed in pounds of pure live seed (PLS).
3. Grassland Areas to be seeded according to the Minimum Care Lawn Specifications included in Table 3.32-D of the Virginia Erosion and Sediment Control Handbook, Third Edition.

REVISIONS

No.	Date	Description	Rev. By	App. By

Horizontal Datum: N/A
Vertical Datum: N/A
Boundary and Topo Source: N/A

Design: JTK
Draft: JTK
Approved: FRG

Sheet # 21 of 69

DATE: AUGUST 2012 SCALE: N/A

Professional Engineer Seal for Frank R. Graziano, Lic. No. 032099.

Computer File Name: P:\NORTH VIRGINIA STREAM RESTORATION BANK\...

Northern Virginia Stream Restoration Bank
Colvin Run - Wiehle South
Fairfax County, Virginia

Planting Notes and Details

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